

CLAIMS

What is claimed is:

1 1. A method for managing data storage in a memory, comprising:
2 creating at least two free link lists having entries designating available
3 free memory locations;
4 tracking the number of entries in each of the free link lists;
5 identifying free memory locations as such locations become available
6 for data storage; and
7 splicing available memory locations onto a shortest one of the free link
8 lists.

1 2. The method of claim 1 wherein each of the link lists to be spliced
2 onto the free link lists is structured to maintain a head pointer, a head plus
3 one pointer and a tail pointer.

1 3. The method of claim 2 and including the steps of allocating from
2 a head pointer and splicing from head plus one to a tail pointer.

1 4. The method of claim 3 and including the steps of simultaneously
2 allocating and freeing memory locations.

3 5. The method of claim 4 and including the step of setting the link
4 list tail pointer to the head pointer plus one.

1 5. The method of claim 3 and including the step of setting the link
2 list tail pointer to the head pointer plus one.

1 6. The method of claim 5 and including the step of setting the free
2 link list tail pointer to the address of the tail of the last freed memory.

1 7 A method for managing data storage in a memory, comprising:
2 creating at least two free link lists identifying available data storage
3 locations in the memory;
4 storing data in a plurality of data locations in the memory wherein each
5 block of data is stored in a link list and each link list includes a head and a tail;

6 reading a head pointer from one of the free link lists to determine a
7 beginning location of a block of data to be stored; and
8 simultaneously allocating data storage at a location of a head pointer of
9 the other of the free link lists

1 . 7. The method of claim 6 and including the step of maintaining a
2 plurality of free link lists wherein each list identifies different lists of available
3 memory.

1 8. The method of claim 7 and including the step of adding available
2 link lists to a shortest one of the free link lists so as to maintain balance
3 between the free link lists.

1 9. The method of claim 8 wherein the plurality of free link lists
2 comprises two free link lists.

1 10. The method of claim 7 and including the steps of simultaneously
2 allocating and freeing memory in one memory cycle.